[Substitute Claims 1 to 34]

PCT/EP00/03634
Faist Automotive GmbH & Co. KG
"Sound Shielding Element"
8571. PT-WO
HJM/Nj

Text of the Claims

1. Sound shielding element for protection from the propagation of sound from the noise area of a room or space into a neighbouring room or space, comprising at least one panel (1) or layer, respectively, including many small perforations (2),
characterised by the following dimensioning:
   a. the average diameter (D) or the width (b) of said perforations (2) ranges between 0.001 and 2 mm;
   b. the hole/surface ratio (LV) ranges between 0.001 and 20 %.

2. Sound shielding element for covering sound-reflecting and/or generating structural parts, comprising at least one panel (1) or layer including many small perforations (2),
characterised by the following dimensioning:
   a. the average diameter (D) or the width (b) of said perforations (2) ranges between 0.001 and 2 mm;
   b. the hole/surface ratio (LV) ranges between 0.001 and 20 %.

3. Sound shielding element according to Claim 1 or 2,
characterised in

that said panel (1) has a thickness (d) between 0.05 and 4 mm, an average diameter (D) or an average width (b) between 0.01 and 0.7 mm and a hole/surface ratio (LV) between 0.01 and 5 %.

4. Sound shielding element according to any of the preceding Claims,
characterised in
that said panel (2) or layer is made of polypropylene (PP).

5. Sound shielding element according to any of the preceding Claims,
characterised in
that perforations (2) are configured as narrow or fine slots, respectively, having a width (b) between 0.02 and 0.18 mm and a length (l) between 0.02 and 30 mm.

6. Sound shielding element according to Claim 5,
characterised in
that said slots have a width (b) between 0.08 and 0.15 mm and a slot length (l) between 0.8 and 2.2 mm and are disposed at an offset at a spacing (a_1) transversely to their longitudinal extension by less than half the slot length (l).

7. Sound shielding element according to any of the preceding Claims,
characterised in
that said panel (1) is configured as three-dimensionally shaped moulded part and is injection-moulded or pressed from synthetic material.

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8. Sound shielding element according to any of the Claims 1-6, **characterised in** that said panel (1) or layer is three-dimensionally shaped without cutting by stretching.

9. Sound shielding element according to any of the Claims 1-6, **characterised in** that said panel (1) or layer is deep-drawn from a planar plate, board, tape, strip or sheet.

10. Sound shielding element according to any of the Claims 7-9, **characterised in** that said moulded part presents a thickness (6) between 0.05 and 4 mm, particularly between 0.2 and 1 mm.

11. Sound shielding element according to Claim 10, **characterised in** that said panel (1) or layer is provided with perforations (2) in a sieve-like or raster-like form.

12. Sound shielding element according to any of the preceding Claims, **characterised in** that said panel (1) or layer that said panel (1) or layer consists of aluminium, steel sheet, ceramic or a highly temperature-resistant synthetic material.

13. Sound shielding element according to any of the preceding Claims, **characterised in** that said panel (1) or layer is used as covering layer on a sound-absorbing layer consisting, for instance, of a

nonwoven fabric or foamed material or on a chamber-type or membrane-type absorber, and presents a hole/surface ratio between 3 and 10 % and an average hole diameter between 0.1 and 0.5 mm.

14. Application of the sound shielding element according to any of the preceding Claims as injection-moulded operating element.

15. Application of the sound shielding element according to any of the Claims 1 to 13 as roof lining in the passenger compartment of motor vehicles.

16. Application of the sound shielding element according to any of the Claims 1 to 13 on the underbody lining of motor vehicles.

17. Application of the sound shielding element according to any of the Claims 1 to 13 as injection-moulded cover unit for covering cables and the like.

18. Application of the sound shielding element according to any of the Claims 1 to 13 as wheel case shell on motor vehicles.

19. Application of the sound shielding element according to any of the Claims 1 to 13 as hat rack in motor vehicles.

20. Application of the sound shielding element according to any of the Claims 1 to 13 as seat cover in motor vehicles.

21. Application of the sound shielding element according to any of the Claims 1 to 13 as door lining.

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22. Application of the sound shielding element according to any of the Claims 1 to 13 as absorbing tube for the exhaust gas system, for the ventilation system or any other air-conducting tubes.

23. Application of the sound shielding element according to any of the Claims 1 to 13 as decorative wheel shield or as engine bonnet lining of motor vehicles.

24. Application of the sound shielding element according to any of the Claims 1 to 13 as cover for covering at least one part of an internal combustion engine.

25. Application of the sound shielding element according to any of the Claims 1 to 13 as luggage trunk cover, e.g. in the form of a blind.

26. Application of the sound shielding element according to any of the Claims 1 to 13 as thermal shielding element.

27. Application of the sound shielding element according to any of the Claims 1 to 13 as covering layer on honey-comb composite panels.

28. Application of the sound shielding element according to any of the Claims 1 to 13 in combination with further panels (1) that are spaced from each other and disposed in a substantially parallel arrangement.

29. Method of producing a sound shielding element according to any of the Claims 1 to 13,
characterised in

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that said panel (1) or layer is produced by fusing or bonding particles or fibres.

30. Method of producing a sound shielding element according to any of the Claims 1 to 13,
characterised in
that said perforated panel (1) or layer is produced by weaving threads formed of fibres.

31. Method of producing a sound shielding element according to any of the Claims 1 to 13,
characterised in
that a textile tissue is impregnated with a thermoplastic material and moulded to assume a three-dimensional shape.

32. Method of producing a sound shielding element according to any of the Claims 1 to 13,
characterised in
that perforations (2) in said panel (1) or layer are produced by electric discharges using an electric arc through said panel (1) or layer, respectively.

33 Method of producing a sound shielding element according to any of the Claims 1 to 13,
characterised in
that perforations (2) in said panel (1) or layer are produced by bombardment of the latter with particles.

34. Method of producing a sound shielding element according to any of the Claims 1 to 13,

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characterised in

that perforations (2) in said panel (1) or layer are produced by means of needle or cutter blocks and/or needle- or cutter-carrying boards.

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